

**COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Tidewater Regional Office**

STATEMENT OF LEGAL AND FACTUAL BASIS

Hampton/NASA Steam Plant
50 Wythe Creek Rd
Hampton, VA 23666

Permit No: TRO-61019

Significant Modification Date: May 30, 2006

Effective Date: May 30, 2006

Expiration Date: December 31, 2009

As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Hampton/NASA Steam Plant has applied for a significant permit modification to the Title V Operating Permit for its combustion and waste heat recovery facility. The Department has reviewed the application and has prepared a modified Title V Operating Permit.

Engineer/Permit Contact: _____ Date: May 30, 2006

Air Permit Manager: _____ Date: May 30, 2006

Deputy Regional Director: _____ Date: May 30, 2006

I. REQUESTED MODIFICATION

On October 9, 2005, the TRO received a request from Hampton/NASA Steam Plant for a significant modification to their Title V operating permit.

The request is to incorporate into the facility Title V operating permit the requirements of 9 VAC 5 Chapter 40, Article 46, which was promulgated September 10, 2003, requiring a compliance date of November 5, 2005. The minor source permit modification request was received at the same time and was modified and issued on January 12, 2006.

II. REASON FOR MODIFICATION

In 2000 EPA promulgated NSPS Subpart BBBB which required the states to issue emission guidelines and compliance times for Small Municipal Waste Combustion Units. The Commonwealth of Virginia issued 9 VAC 5 Chapter 40, Article 46 in September 2003 which is the Emission Standards for Small Municipal Waste Combustors. Article 46 required this facility to be in compliance with the guidelines by November 5, 2005. This regulation requires emission standards for many pollutants and required changes to their pollution control equipment which, therefore, required the facility to modify their minor source permit. Hampton/NASA submitted applications for both their minor source permit and their Title V operating permit at the same time. The modified minor source permit was issued in January 2006 and this action is to incorporate the changes to the minor source permit into their Title V operating permit.

III. APPLICABILITY OF 9 VAC 5-80-230

This permit modification will make significant changes to the monitoring and reporting requirements as well as changes to emission standards. These changes will result in changes that meet the definition of Significant Modification, therefore this permit is being processed using the Significant Modification Procedures as defined in 9 VAC 5-80-230.

IV. PUBLIC PARTICIPATION

The public participation requirements of 9 VAC 5-80-270 apply to this significant permit modification. A 30-day public notice is required.

V. PERMIT REVIEW BY EPA AND AFFECTED STATES

The EPA and affected states review requirements of 9 VAC 5-80-290 apply to this significant permit modification. A 45-day EPA review period is required. North Carolina is an affected state, and will be notified of this significant permit modification.

VI. CHANGES TO TITLE V OPERATING PERMIT

There are many changes that have been made to this permit. Below is a list of those changes:

Page 3: Description of facility has been updated to reflect the new pollution control equipment.

Section III –

Conditions A.2, 4, 7, 9, 12, 13, B.1, 2, 3, 5, 6, 8, 9, 10, D.2, 3, and E.1 have all been added to the permit, mostly from the 1/12/2006 revised minor NSR permit.

Condition A.3. (old A2) has been modified to reflect the new pollution control equipment.

Condition A.11 (old A3) has been modified to reduce the opacity and pulled from the 1/12/2006 minor NSR.

Condition C.1. has been updated to reflect the new recordkeeping requirements from the 1/12/2006 minor NSR.

Section IV - Eliminated the Facility Wide Conditions section from the original permit and incorporated those conditions into the new permit via the new boilerplate. (old IV A and B were removed, C is now E.2., D is now VII N. and VIII, and E has been removed because this Title V incorporates all the specific conditions of Subpart BBBB and Article 46)

Section VI – Updated to what the new permit application lists as inapplicable requirements.

Section VII – Updated to reflect the new boilerplate language.

Section VIII – This section has been added to the boilerplate and is now part of this permit.

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Tidewater Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Hampton/NASA Steam Plant
50 Wythe Creek, Hampton, Virginia
Permit No. 61019VA

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Hampton/NASA Joint Board of Oversight has applied for a Title V Operating Permit for its municipal solid waste combustion facility. The Department has reviewed the application and has prepared a Title V Operating Permit.

Engineer/Permit Contact:_____

Date:_____

Air Permit Manager:_____

Date:_____

Regional Permit Manager:_____

Date:_____

FACILITY INFORMATION

Permittee

Hampton/NASA Joint Board of Oversight
50 Wythe Creek, Hampton, Virginia 23666

Facility

Hampton/NASA Steam Plant
50 Wythe Creek, Hampton, Virginia
AIRS ID No. 51-650-0061

SOURCE DESCRIPTION

Hampton/NASA Steam Plant is a Title V major source of nitrogen oxides (NO_x), sulfur dioxides (SO₂), and hydrogen chloride (HCL), located in an attainment area for all pollutants, and is a state major source because annual emissions of one or more criteria pollutants have each exceeded 100 tons. The facility is permitted under a state major new source review (NSR) permit issued September 14, 1984, modified January 11, 1989, and amended July 14, 1993.

On December 6, 2000, EPA adopted emissions guidelines (EGs) for existing small municipal waste combustor (MWC) units (built before August 30, 1999). The plant's two steam generators are defined in those guidelines as Class 2 Small MWC units, which are units at plants with a total capacity less than 250 tons per day. They are not subject to federal new source performance standards (NSPS) for refuse incinerators (Code of Federal Regulations, 40 CFR 60, Subpart E), nor to NSPS for large municipal waste combustors (MWCs) (40 CFR 60, Subpart Eb), nor to Emissions Guidelines for large MWCs (40 CFR 60, Subpart Cb).

These refuse fired boilers are mass-burn waterwall units, with an electrostatic precipitator (ESP) on each unit for particulate matter control. In 1984, steam air heaters were added for the undergrate air supply system to preheat combustion air to 300 degrees F to improve wet-refuse combustion (Ref: November 25, 1992, Detroit Stoker letter). Stack tests were conducted (for MWC organics, particulate matter (PM) and carbon monoxide (CO)) between April 18, 1988, and April 24, 1988, at 33,000 pounds (lb) steam at 360 pounds per square inch, gage pressure (psig). The 1989 permit modification removed a daily refuse throughput limit, and added a dioxin limit and compliance method consisting of stack testing and correlation between measured dioxin emission rates and process operation parameters. A January 28, 1993, letter from the facility concluded that the preheater operation has no significant effect on furnace operating temperatures, and proposed that its use only be required when needed by the operator to minimize high moisture content in the refuse.

Originally built without a grate temperature monitoring system, temperature measurement at the upper furnace was determined in a July 6, 1993, DEQ memo for a permit amendment to be sufficient to insure adequate combustion temperatures. Also, specification of a maximum temperature at each ESP inlet as a permit condition was not determined to be required.

A letter from the facility proposed to conduct the 1994 biennial testing in December, 1993, to achieve better test conditions regarding moisture content in the refuse. The biennial stack tests were conducted in 1996. The 1998 calendar year tests were completed in January, 1999. Testing was last conducted in December, 2000.

The NSR permit specifies that each MWC unit's maximum permitted steam production capacity is 33,000 lb/hr steam. A clarifying sentence is added in the Title V condition that while maintaining the permitted combustion temperature and normal mass input, the output steam rate may vary up to 10 percent. Emissions guidelines issued December 6, 2000, for small MWCs define an acceptable output load range of steam pressure as up to 110 percent of the maximum output load measured during the previous dioxins/furans tests. Cleaning of boilers (after which boiler efficiencies are highest) results in temporary higher levels of steam production when complying with the upper furnace minimum temperature permit requirement. The 1993 NSR specified that the upper furnace temperature (minimum of 1450 degrees F) shall be continuously monitored, displayed, and recorded.

Each boiler's current particulate matter (PM) limit is 0.08 grains/dry standard cubic foot (dscf); each boiler's current MWC organics (dioxins/furans) limit is 196 nanograms per dry standard cubic meter (dscm), corrected to 7 percent oxygen (dry basis).

The source generates steam at 385 psig (at the boiler exit) which is the correct specification of the steam, and which is used in the Title V permit to describe the steam generated by these boilers. Leaving the plant is 360 psig steam provided to customers (which is the value referenced in the NSR permit to describe the steam from the boilers). Refuse combustion capacity is unchanged. The two boilers currently operate 5 percent below their rated refuse capacities of 86,000 tons each, per year.

COMPLIANCE STATUS

The facility is inspected once a year, and is currently in compliance.

EMISSIONS UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Unit ID	Stack ID	Emissions Unit Description	Size/Rated Input Capacities *	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable NSR Permit Dates
Fuel Burning Equipment							
1	1	Keeler MK1 waterwall boiler, NB5341; 1979	10,200 pounds refuse per hour (lb/hr) incineration capacity; burner rated heat input capacity 45.9 million BTU per hour (mmBTU/hr) (refuse only)	ESP, Precipitair Pollution Control Corp. Model # PPC 13-1219-2	ESP #1	TSP,PM10, Cadmium, Lead	9/14/84 (superceded); 1/11/89 (superceded modification); 7/14/93 (current amendment)
2	2	Keeler MK1 waterwall boiler, NB5342; 1979	10,200 lb/hr refuse incineration capacity; burner rated capacity 45.9 mmBTU/hr (refuse only)	ESP, Precipitair Pollution Control Corp. Model # PPC 13-1219-2	ESP #2	TSP,PM10, Cadmium, Lead	9/14/84 (superceded); 1/11/89 (superceded modification); 7/14/93 (current amendment)

* On the basis of a 4,500 british thermal units (BTU)/lb refuse heat value, and a design efficiency of 72.5%.

EMISSIONS INVENTORY

A copy of the annual emissions update is attached as Attachment A. Emissions are summarized in the following tables.

2000 Actual Emissions

Emissions Unit	Criteria Pollutant Emissions in Tons/Year				
	VOC	CO	SO ₂	PM ₁₀ ,	NO _x
Boiler 1	2.0	2.1	46.3	1.9	76.2
Boiler 2	1.8	2.0	42.2	1.8	69.4
Total	3.8	4.1	88.5	3.7	145.6

2000 Facility Hazardous Air Pollutant Emissions

Pollutant	Hazardous Air Pollutant (HAP) Emissions in Tons/Year
Hydrogen chloride (HCL)	274.8

EMISSIONS UNIT APPLICABLE REQUIREMENTS - [Boilers 1 and 2]

Limitations

The following limits on throughput, temperatures, acceptable materials for combustion, and PM and HAP emissions, are federally enforceable state best available control technology (BACT) requirements from NSR Specific Conditions 2, 4 through 6, 8 through 13, and General Conditions 4 through 15, of the minor NSR permit issued September 14, 1984, as modified January 11, 1989, and as amended July 14, 1993 (Attachment B).

1. NSR Specific Condition 2 requirements are addressed in Title V Specific Condition IV.A.
2. To reflect the emissions guidelines addressal of output load variability when output limits are assigned to meet heat input based emission standards, NSR Specific Condition 4 wording has been revised in Title V Specific Condition III.A.1, to clarify that up to 10% variability is expected when monitoring the steam generation rate of 33,000 pounds per hour of 385 psig saturated steam as measured at the boiler exits, calculated as a monthly average.

3. NSR Specific Condition 5 limits PM/PM₁₀ emissions of each refuse fired boiler to 0.08 grains per dry standard cubic foot (dscf) at standard conditions, at 12% CO₂, and 29.8 tons per year; and limits MWC organics (formerly referred to as Adioxins and furans®, and consisting of total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans) to a total concentration of 196 nanograms per dry standard cubic meter (dscm), corrected to 7 percent oxygen (dry basis). These limits are specified in Title V Specific Condition III.A.7.
4. NSR Specific Condition 6 requirements for PM/PM₁₀ control by electrostatic precipitator (ESP), and access for inspection, are addressed in Title V Specific Condition III.A.2.
5. NSR Specific Condition 8 requirements for opacity testing, to meet visibility standards in NSR General Condition 14, are addressed in Title V Specific Condition III.C.1; requirements for testing of PM/PM₁₀ and organics are addressed in Title V Specific Conditions III.C.1 and III.C.2.
6. NSR Specific Condition 9 CEM requirements are in Title V Conditions III.B.3 and III.B.6.e.
7. NSR Specific Condition 10 requires selective use of combustion air preheating when burning high moisture refuse, as indicated by carbon monoxide (CO) spiking (when CO concentration is above 100 ppm) and heavy flame beds (when flame beds are in excess of two feet above the grate at the drop-off of the burn-out section). Limits in this condition are specified in Title V Specific Condition III.A.4.
8. NSR Specific Condition 11 recordkeeping requirements are addressed in Title V Specific Conditions III.B.6.a through III.B.6.d, and Title V General Condition VII.C.
9. NSR Specific Condition 12 requires the maintenance of good combustion conditions to keep combustion temperatures over the grates above 1650EF, and specifies a minimum upper furnace temperature of 1450EF, to be continuously monitored, displayed, and recorded. Limits in this condition are specified in Title V Specific Condition III.A.5. Monitoring and recordkeeping requirements are specified in Title V Specific Conditions III.B.4, and III.B.6.f.
10. NSR Specific Condition 13 requirements are in Title V Specific Condition III.A.6 to specify that RCRA-regulated materials specified in Subtitle C shall not be incinerated.
11. NSR General Condition 4 requirements have been streamlined by a five year requirement in Title V General Condition VII.C.2.
12. NSR General Condition 5 requirements for completion and documentation of air pollution control (APC) equipment operator training and certification are addressed in Title V Specific Conditions III.B.5 and III.B.6.g.

13. NSR General Condition 6 requirements are addressed in Title V Specific Condition III.B.1.
14. NSR General Conditions 7 and 8 requirements are in Title V General Conditions VII.H (Duty to Comply), VII.J (Permit Action for Cause), and VII.R (Reopening For Cause).
15. NSR General Condition 9 requirements for notification of noncompliance are in Title V General Conditions VII.E (Permit Deviation Reporting) and VII.U (Malfunction as an Affirmative Defense).
16. NSR General Condition 10 requirements are in Title V General Conditions VII.H and VII.J.2.
17. NSR General Condition 11 requirements on toxic pollutants are addressed by state plan requirements for small MWCs in Title V Specific Condition IV.E.
18. NSR General Condition 12 requirements on ownership changes are addressed in Title V General Condition VII.T.
19. NSR General Condition 13 severability requirements are in Title V General Condition VII.G.
20. NSR General Condition 14 standards on visibility, dust, and odor are in Conditions IV.D (Facility Wide Requirements), and VII.N (Fugitive Dust Emission Standards).
21. NSR General Condition 15 requirements are specified in Title V General Conditions VII.C, VII.D, VII.L, and VII.Q.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-50-80 and 9 VAC 5-50-290, New Source Standards for Visible Emissions

Monitoring and Recordkeeping

Requirements are specified in Title V Specific Condition III.B.1 to insure the ESP is operating properly, and to document proper ESP operation and maintenance procedures. Title V Specific Condition III.B.2 specifies visible emission assessment requirements. Monitoring requirements from NSR Specific Conditions 9 and 12 are modified to meet Part 70 requirements (CO monitoring from NSR Specific Condition 9, and monitoring of temperature in the upper furnace from NSR Specific Condition 12).

Records are required in Title V Specific Condition III.B.6 for steam production, operating hours, average hourly steam, preheater conditions (from NSR Specific Condition 11), CO emissions (from NSR Specific Condition 9); upper furnace temperatures (from NSR Specific Condition 12), and training and certification of APC equipment operators (from NSR General Condition 5).

Monthly calculations are specified to show compliance with the annual PM emissions limit. This NSR limit was developed based on unit design air flow, and the 0.08 grains per dry standard cubic foot (gr/dscf) limit, and the unit operating at design rate for 365 days per year. Emission rates for PM/PM10 in gr/dscf, and MWC organics, in nanograms (ng)/dscf, are verified during each biennial test. PM/PM10 test results are generally 10% of the AP42-factor based emissions limit. MWC organics are more variable, but generally 60% to 90% of the 196 ng/dscf limit. Ongoing compliance with those emission limits is based on continuous monitoring and records of upper furnace temperatures, and of CO emissions in the boiler exhaust streams. These two parameters were determined during NSR to correlate with emission rates of the two targeted pollutants, and were measured during compliance testing while measuring targeted pollutants. Acceptable levels were determined during testing, and are assigned as permit limits to determine that pollutant emission rates remain acceptable.

Recordkeeping is added in Title V Specific Condition III.B.6.f for APC unit inlet temperatures. A narrative record of boiler operating conditions is specified in Title V Condition III.B.6.i. Results of visible emission evaluations, and summaries of corrective actions taken are specified in III.B.6.j.

Testing

NSR Specific Condition 8 requirements for biennial testing for Particulate Matter (PM), and MWC organics(dioxins/furans) for one boiler each test period are addressed in Title V Specific Conditions III.C.1 and III.C.2, which also specify additional requirements and test methods.

The Department and EPA have authority to require testing not included in this permit, if necessary to determine compliance with an emissions limit or standard.

Reporting

NSR Specific Condition 8 requires data reduction and reporting of stack test results in accordance with state toxics regulations (9 VAC 5-50-30). NSR General Condition 1 only specifies a reporting time following the completion of the initial testing period. So, Title V Specific Condition III.D reflects those requirements, and also specifies a reporting time of 120 days after each biennial test phase for MWC organics testing.

Seven Title V General Conditions in Section VII (D, E, F, L, T, U, and W) each contain specific reporting requirements that address applicable regulatory requirements in the Virginia Administrative Code (VAC).

Streamlined Requirements

1. The changes proposed to unit load measured as steam output specified in NSR Specific Condition 4 are not subject to the NSR permitting requirements of 9 VAC 5-80-10 of the Commonwealth of Virginia Regulations for Control and Abatement of Air Pollution. Heat input is not changed, and the definition used in the recently approved emission guidelines allows for 10% variability in measured output rates due to efficiency variations over time.
2. The change proposed to output steam pressure in NSR Specific Condition 4 is not subject to NSR permitting requirements of 9 VAC 5-80-10 of the Commonwealth of Virginia Regulations for Control and Abatement of Air Pollution. The change is to more correctly reference the pressure that is measured at the boiler exit, rather than the pressure at the end of the supply line to the customer which was a contractual requirement rather than a monitored performance parameter.
3. Three NSR Specific Conditions have not been included:
 - a. NSR Specific Condition 1 has not been included, because the facility location is specified in the cover page of the operating permit.
 - b. NSR Specific Conditions 3 and 7 are not included, because the equipment and test ports are installed, and Title V Condition II (Emissions Units) lists equipment to be operated. Maximum heat input capacities of the boilers is unchanged; but the output steam capacities are different from capacities specified in the NSR permit because of the NSR determination addressed in the Streamlined Requirements section above.
4. Requirements of 3 NSR General Conditions are not reflected for the following reasons:
 - a. NSR General Condition 1 has not been included because initial testing is complete.
 - b. NSR General Condition 2 has not been included because test ports are installed.
 - c. NSR General Condition 3 has not been included because CEM systems were operational prior to initial performance testing.

FACILITYWIDE CONDITIONS

Requirements in NSR Specific Condition 2 to operate in accordance with facility documents submitted to DEQ are listed in Title V Condition IV.A. Title V Condition IV.B addresses the requirement to provide data upon request. Title V Condition IV.C addresses an applicable requirement, stipulated in 9 VAC 5-70-50, to prepare and provide a standby emissions reduction plan (SERP) to DEQ within 30 days upon request. Title V Condition IV.D addresses standards for fugitive emissions. Title V Condition IV.E. addresses the requirement to comply with the state or federal plan for existing, small MWCs when promulgated.

INSIGNIFICANT EMISSIONS UNITS

Insignificant emissions units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emissions units in accordance with 9 VAC 5-80-110.

Insignificant emissions units include the following:

Emissions Unit No.	Emissions Unit Description	Citation ¹ (9 VAC_)	Pollutant Emitted (5-80-720 B.)	Rated Capacity (5-80-720 C.)
EG1	Emergency Diesel Generator	5-80-720 C.2.a.	PM, VOC, NOx, SO2, CO	125 kW

¹The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

FUTURE APPLICABLE REQUIREMENTS

1. Background. Emissions Guidelines (EG) (40 CFR 60, Subpart BBBBB) have been finalized for existing small municipal waste combustors (MWCs) under Section 129 of the Clean Air Act Amendments (CAAA) of 1990. (A proposed NSPS (40 CFR 60, Subpart AAAA) has also been developed for new small MWCs.) Within 18 months after approval of an applicable State rule, the facility will be required to submit to the Director, Tidewater Regional Office, a plan for compliance with the EG and applicable state rule. The plan will be expected to demonstrate full compliance with the emissions guidelines within three years of promulgation of the state rule, except for any on-site operator certification, which will be complied with within one year after performance testing of the retrofit air pollution control system. The new state requirement, when promulgated, will reference 9 VAC 5-80-110.L, and CAAA Section 129.
2. Summary of Regulations. Clean Air Act (CAA) Sections 111 and 129 require the Commonwealth of Virginia to submit a plan to implement and enforce the EG. Virginia's small MWC plan was due to EPA December 6, 2001. After December 6, 2002, EPA will publish a federal plan for Virginia, if required. Federal EGs would be interim requirements until a Virginia plan is approved, after which federal EGs would no longer apply. The comment period on the proposed federal EG closed August 13, 2001.

3. Emission Limits. The federal EG, effective February 1, 2001, requires the state to specify emission limits for 8 pollutants: one organic-dioxins/furans, 4 metals-cadmium (Cd), lead (Pb), mercury (Hg), and particulate matter (PM), and 3 acid gases-hydrogen chloride (HCl), sulfur dioxide (SO₂), and nitrogen oxides (NO_x). Small MWC units are subcategorized based on aggregate plant capacity. Class I units are small MWC units at plants with capacity greater than 250 tons per day of MSW; Class II units are in plants with lower aggregate capacity.

Basis for Class II categorization (information provided by source):

Maximum measured steam rate at 110% worst case load capacity: 36,300 lb/hr;

Heat content for steam: 913 BTU/lb steam (from steam tables);

Assumed minimum wet refuse heat capacity: 4,500 BTU/lb (specified in the Model Rule);

Assumed minimum boiler efficiencies: 72.5%, based on initial performance tests in 1980.

Unit refuse hourly capacity: $\frac{36,300 \text{ lb/hr} \times 913 \text{ BTU/lb steam}}{4,500 \text{ BTU/lb} \times 72.5\%} = 10,159 \text{ lb refuse/hr}$

Maximum daily plant capacity: $10,200 \text{ lb/hr} \times 2 \text{ units} \times 24 \text{ hr/day} \times \text{tn}/2000 \text{ lb} = 245 \text{ tn/day}$.

Therefore, this is a Class II small MWC plant (total plantwide capacity below 250 tn/day).

4. Parametric Limits. CAA Section 129 requires EPA to set minimum thresholds for the above limits. It specifies that EPA may also specify limits, or the required monitoring of, post-combustion concentrations of surrogate substances, parameters, or periods of residence times in excess of stated temperatures with respect to other pollutants. So EPA also sets good combustion practice requirements for MWC operating load, ESP inlet temperature, carbon feed rate, and fugitive ash control. All of these were in the 1995 EG. Maximum demonstrated load (MDL) (ref 40 CFR 60.1940 says load limit will be 110% of MDL, so 33,000 lb/hr MDL means that 36,300 lb/hr is acceptable as an upper limit on 4-hr averages) allows for variability of output parameters due to changes in heat efficiency immediately after cleaning cycles of the boiler chambers.
5. Types of Limits. Emission limits are concentration based. There will be alternative %reduction requirements available for Hg, SO₂, and HCl. Opacity and fugitive ash requirements are the same as 1995 EG. Federal EGs require emission controls, and good combustion practices (operator training and certification, and MWC operating requirements).
6. Basis for Limits. MACT floors were calculated for Small MWC units, and limits were set.
7. Compliance Schedule. This source will comply with Virginia's plan by December 6, 2005, or by three years after state plan approval (if approval is before December 6, 2002). Upon request, this source will provide Virginia, for submission to EPA, dioxins/furans stack test results for at least one unit's test conducted after 1990. The stack tests will have been conducted according to procedures specified in Section 40 CFR 60.1790. If either unit is modified or reconstructed after June 6, 2001, that unit will become subject to the NSPS for small MWCs (40 CFR 60, Subpart AAAAA), and Virginia's small MWC plan will no longer apply. If a unit is modified solely to comply with the Virginia plan, Subpart AAAAA will not apply to that unit.
8. Basis for State Rule. The "Model Rule" is the portion of the Subpart BBBB emission guidelines (Sections 40 CFR 60.1585 to 40 CFR 60.1905) that specifies regulatory requirements for small MWC units. The state rule will have five parts: (1) compliance schedule, (2) good combustion practices (operator training and certification, and operating requirements), (3) emission limits, (4) monitoring and testing, and (5) recordkeeping and reporting. The eleven regulated pollutants are

grouped as organics (Dioxins/furans), metals (Cd, Pb, Hg, Opacity, and PM), acid gases (HCl, NOx, and SO2), and other pollutants (CO and Fugitive ash).

9. Target Dates. The state plan will set target dates to be met as “increments of progress” for either of these units that fails to achieve full compliance within 1 year after the NSR permit is modified to reflect state plan requirements. The “increments of progress” would include submission of a final control plan, notification of retrofit contract award, notification of initiation and completion of onsite construction, and achievement of final compliance.
10. State Plan Requirements-Compliance with Emissions Limits. After initial stack test and/or continuous emission monitoring system (CEMS) evaluation, this source will be required to meet emission limits, including dioxins/furans limits, by December 6, 2005, even if the NSR permit is not modified until within one year of that date.
11. State plan requirements - Combustion Practices.
 - a. Operator training and certification, and an operating manual, are required within one year of state plan approval.
 - b. The 4-hour average load of each unit may not exceed 110% of the maximum 4-hour average load achieved in successful dioxins/furans testing (measured as steam output in pounds per hour).
 - c. Maximum ESP inlet temperatures may not exceed 17 degrees C above measured 4-hour average temperature with which the dioxin/furan limits were met in the last test period.
 - d. Both units will be exempt from the above limits when preapproval is received for the following activities: annual testing for dioxins/furans, annual testing for mercury (Hg) (for carbon feed rate requirements only), during 2 weeks before dioxin tests, or Hg tests (for carbon feed rate requirements only), evaluation of system performance, test new technology, perform diagnostic tests, conduct other performance improving activities.
 - e. Above requirements will not apply during either unit's startup, shutdown or malfunction periods of less than 3 hours each.

12. State plan requirements – Proposed Emission Limits. The following emission limits are proposed in the EG to apply to Class II small MWCs after December 6, 2005:

[From Tables 4 and 5 of NSPS Subpart BBBB-Emission Guidelines for Class II Existing Small MWCs.]

<u>Group/Pollutants</u>	<u>Proposed Emissions Limits (proposed averaging method)</u>
Organics: dioxins/furans	125 ng/dscm (3-hr average)
Metals: cadmium	0.10 mg/dscm (3-run average)
lead	1.6 mg/dscm (3-run average)
mercury	0.080 mg/dscm (3-run average) or 85% reduction
opacity	10 %, average of 30 6-minute averages)
pm	70 mg/dscm (3-run average)
Acid gases: hydrochloric acid	250 ppmv,d (3-run average) or 50% reduction
sulfur dioxide	77 ppmv,d or 50% reduction (24-hr average)
Other: fugitive ash	visible emissions 5% of minutes in each of three 1-hr periods
carbon monoxide	100 ppmv,d (4-hr average)

13. State plan requirements - Monitoring and testing.

- a. CEMS to show continuous compliance will be required for CO and SO₂; a COM is required; SO₂ and O₂ (or CO₂) will be monitored at each ESP exit, and will comply with 40 CFR 60.13; request any proposed SO₂ monitoring alternatives from DEQ under 60.13(i);
- b. The source will verify proper operation of each CEMS by initial (within 6 months after final compliance date), daily, quarterly, and annual evaluations, using Part 60, Appendix F;
- c. CEMS data will be obtained in one-hour averages, based on at least 2 data points per hour;
- d. Compliance with other emission limits will be demonstrated by initial (within 6 months after final compliance date) and annual stack tests (each within 13 months of the previous one) for dioxins/furans, Cd, Pb, Hg, PM, opacity, HCl, and fugitive ash (see 40 CFR 60.1780). Testing less than once a year would only be approved if dioxins/furans are less than 30 ng/dscm for two consecutive years.
- e. Other continuous monitoring parameters: Unit loads (using 4-hour average steam rate), ESP inlet temperatures, and carbon feed rate (if activated carbon is used to control dioxins/furans, or Hg).

14. State plan requirements - Recordkeeping and reporting.

a. Steam Parameter Records: This source will be required to:

- (1) Continuously record lb/hr of steam;
- (2) Calculate steam flow in 4-hr averages;
- (3) Calculate steam flow using ``American Society of Mechanical Engineers Power Test Codes: Test Code for Steam Generating Units, Power Test Code 4.1--1964 (R1991)," section 4 (incorporated by reference in Section 40 CFR 60.17(h)(2));
- (4) Insure flow measurement nozzles use recommendations in ``American Society of Mechanical Engineers Interim Supplement 19.5 on Instruments and Apparatus: Application, Part II of Fluid Meters," 6th Edition (1971), Chapter 4 (incorporated by reference in Section 40 CFR 60.17(h)(3)); and
- (5) Before each dioxins/furans stack test, or at least once a year, calibrate steam signal conversion element flow measurements using manufacturer instructions.

b. Averaging Methods: If they use continuous parameter monitoring systems, they will obtain 1-hour averages for unit load levels, ESP inlet temperatures, and carbon feed rates (if activated carbon is used to control dioxins/furans or Hg emissions).

c. Minimum Data Point Frequency: They will obtain at least two (2) data points/hr to calculate a 1-hour average. They will obtain valid 1-hour averages for 75% of operating hrs/day for 90% of operating days/calendar quarter. (An operating day is any day a unit combusts any municipal solid waste.) If they do not obtain minimum data required, they will be in violation of the data collection requirement, and will be required to notify DEQ according to Section 40 CFR 60.1885(e).

d. Recordkeeping Items: They will be required to keep records of operator training and certification, stack tests, continuously monitored pollutants and parameters, and carbon feed rate.

e. Required Emission Parameters: They will be required to record eight (8) continuously monitored pollutants and parameters:

- (1) Monitoring data will be 6-minute averages for opacity; 1-hour averages for SO₂, NO_x, and CO concentrations, and 1-hr averages for load levels and ESP inlet temperatures for each unit.
- (2) Average concentration and % reduction parameters:
 - (a) All 24-hr daily block geometric average SO₂ concentrations, or average %SO₂ reductions.
 - (b) All 4-hr block or 24-hr daily block arithmetic average CO concentrations.
 - (c) All 4-hr block arithmetic average load levels for each unit.

- (d) All 4-hr block arithmetic average ESP inlet temperatures.
- (3) Records of exceedances. They will be required to document dates when any of 5 pollutant/parameter levels in item (2), or opacity in item (1), did not meet specified emission limits or operating levels, the reasons, and corrective actions taken.
 - (4) Records of minimum data. They will be required to document dates they do not collect minimum amounts of data for SO₂, CO, load levels, and ESP inlet temperatures, the reasons, and corrective actions they take.
 - (5) Records of exclusions. They will document when, and why, any data is excluded from calculation of averages for SO₂, CO, load levels, and ESP inlet temperatures.
 - (6) Records of drift and accuracy. They will be required to document results of daily drift tests and quarterly accuracy determinations for SO₂ and CO CEMS.
 - (7) Records of the relationship between O₂ and CO₂. If they monitor CO₂ instead of O₂ as a diluent gas, they will be required to document the relationship between them, as specified in Section 40 CFR 60.1745.
 - (8) Records of calendar dates. They will be required to include the calendar date on each record.
- f. Initial and Periodic Reporting Requirements: The source will be required to submit an initial report (within 6 months after final compliance date), and semiannual reports for out-of-limits data. All reports may be electronic, if approved by DEQ.
- (1) The initial report will include measured CEM data summaries, test data summaries, stack test reports, CEMS evaluations, maximum demonstrated load (MDL) for each unit, maximum demonstrated temperatures at each ESP inlet, and average carbon feed rates recorded during initial stack tests for dioxins/furans and Hg.
 - (2) Annual (or semiannual if required by Title V) reports will include stack test results for each of eight (8) pollutants; highest averages recorded by each CEMS and parametric monitors for SO₂, CO, load, and ESP inlet temperatures; highest recorded 6-minute opacities; four specified carbon feed rate parameters; total days with data gaps and reasons (for SO₂, CO, load, ESP inlet temperatures, and carbon); and hours of excluded data and reasons (for SO₂, CO, load, ESP inlet temperatures, and carbon).

- (3) Semianual out-of-compliance reports with the three (3) items of information specified in Section 40 CFR 60.1900.
- (4) For any of the following five (5) pollutants/parameters that exceed specified limits, they will include the calendar date of the exceedance, the averaged and recorded data for that date, the reasons for the exceedance, and corrective actions taken:
 - (a) SO₂ concentration or percent reduction.
 - (b) CO concentration.
 - (c) Load levels.
 - (d) ESP inlet temperatures.
 - (e) Average 6-minute opacities (COM data are not used to decide compliance with opacity limits).
- (5) If annual stack test results show exceedances for dioxins/furans, Cd, Pb, Hg, PM, opacity, HCl, and fugitive ash, they will be required to include a copy of the test report showing the exceedances and corrective actions taken.
- (6) If they use activated carbon to control dioxins/furans or Hg, they will be required to include two items:
 - (a) Documentation of all dates when the 8-hr block average carbon feed rate (calculated from the carbon injection system operating parameter) is less than the highest carbon feed rate established during the most recent Hg and dioxins/furans stack test (as specified in Section 40 CFR 60.1855(a)(1)). They will include the 8-hr average carbon feed rate, reasons for occurrences of low carbon feed rates, the corrective actions taken to meet the feed rate requirement, and the calendar date.
 - (b) Documentation of each quarter when total carbon purchased is less than the total required quarterly carbon usage. If they choose to evaluate total carbon purchased on a unit basis, they will record the total carbon purchased for each unit. They will include the amount of carbon purchased, required quarterly usage of carbon, reasons for not meeting the required quarterly usage, the corrective actions taken, and the calendar date.

INAPPLICABLE REQUIREMENTS

Requirements which do not apply to the source:

Citation	Title of Citation	Description of applicability
40 CFR 60 Subpart E	New Source Performance Standards for Refuse Incinerators	Combustion units 1 and 2 are steam generators, rather than incinerators (for which NSPS Subpart E would apply).
40 CFR 60 Subpart Cb	Emission Guidelines for Existing MWCs	U.S. Court of Appeals vacated the regulation, and remanded it to EPA for review; EPA reissued it, applying only to existing MWC units with capacities exceeding 250 tons per day.
40 CFR 60 Subpart Eb	NSPS for New Municipal Waste Combustors (MWC)	U.S. Court of Appeals vacated the regulation, and remanded it to EPA for review; EPA reissued it, applying only to new MWC units with capacities exceeding 250 tons per day.
CAAA Section 112d (NESHAP) and CAAA Sec 129.h.2	NESHAP and applicable state rules under its authority (9 VAC 5-60)	The CAA exempts Federal and State authority to impose these rules to MWCs subject to CAAA Section 129 rules. Those rules are scheduled to be repromulgated.
40 CFR 60 Subpart BBBB	Emission Guidelines for Existing Small Class I MWCs	Class I small MWC emission limits specified in 40 CFR 60, Subpart BBBB emission guidelines do not apply to these units; these units meet the definition of Class II small MWC units: the facility's total maximum potential process rate is less than 250 tons of refuse per day.

GENERAL CONDITIONS

The permit contains general conditions, required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements, or any excess emissions, including those caused by upsets, within one business day.

Comments on General Conditions

General Condition B: Permit Expiration

This condition refers to the Board taking action on a permit application. The Board referred to is the State Air Pollution Control Board. The authority to take action on permit applications has been delegated to the Regions as allowed by §2.1-20.01:2 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement No. 3-2001".

This general condition cites the entire Articles that follow:

B.2. Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Permits for Stationary Sources

B.3. Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Permits for Stationary Sources

This general condition cites the sections that follow:

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|------|-----------------|---------------------------------|
| B. | 9 VAC 5-80-80. | "Application" |
| B.2. | 9 VAC 5-80-150. | "Action on Permit Applications" |
| B.3. | 9 VAC 5-80-80. | "Application" |
| B.4. | 9 VAC 5-80-80. | "Application" |
| B.4. | 9 VAC 5-80-140. | "Permit shield" |
| B.5. | 9 VAC 5-80-80. | "Application" |

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

A public notice regarding the draft permit was in the October 8, 2001, edition of *The Daily Press*. Public comments were solicited from October 8, 2001, through November 7, 2001. No comments were received.